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lessened demand for muscular exertion to obtain our necessities creates an inability and distaste for exertion to obtain those things that are not necessary; and, as there is a consensus of opinion on that point, it comes to be considered "not the correct thing" to perform any of those acts that require such exertion. Who carries any thing that he can have sent, or walks when he can ride? Who does not now ride in a closed carriage in preference to performing the journey on horseback? An obvious effect of this change is to increase the time spent in houses, manufactories, and offices, and consequently to greatly decrease that spent in the open air. Not only does man spend much more time in his habitation, but also those habitations have materially altered in character. Our sleeping apartments are no longer open to a thatched roof, our doors and windows are made to fit more accurately, and for the wide, open fireplace of our fathers we have substituted the modern grate, which appears to be kept closed on every possible occasion. In a word, the resources of civilization have been used to obtain as much difference as possible between the air in which we now pass the greater portion of our lives and that we have to breathe when out of doors. Whatsoever part of the twenty-four hours is spent in a house is so much time during which the movement of the lungs is impeded, for while there we are generally either sitting down or reclining; and both positions tend to reduce the breathing capacity, the latter more than the former. Also, as there is little muscular exertion in the house, there is a lessened production of heat, for which artificial heat is substituted; hence the great difference between the temperature of the rooms and that of the external air, the great sensitiveness to a lower temperature, and the fear of catching cold. This fear of cold leads to active measures being taken to prevent cold air entering the rooms, and consequently to bad ventilation. And this hyper-sensitiveness to cold tends either to keep us in-doors during the colder months of the year and on those days during which the temperature is lower than usual, or to induce us to so overload the body with clothes when we do go out that free movement of the lungs is impeded.

The habit of stooping, whether brought about by the shape of the chairs (they are admirably adapted for that purpose), by the habit of assuming a so-called easy position, by muscular disuse and consequent weakness, or by poring over books from the nursery through the whole course of modern education, tends to materially reduce the breathing capacity. Very efficacious in the production of chest reduction is the universal custom of both sexes to have their clothes made to exactly fit the body at a period of rest, and thereby effectively preventing any but the most limited movement. Does not this custom effectually check any tendency to movements that would necessitate more than ordinary, tranquil breathing? And have we not enforced this habit by penalizing its breach as indicating a want of *savoir vivre*? Fashion dictates the size and shape of our clothes, and our bodies have to and do conform thereto. A beautiful example of this is seen in the hideous distortion of the lower part of the chest produced by wearing a corset, that never, never is tight. The compression thus produced is one of the most powerful causes of consumption in young girls and women;

and obviously whatever produces either forcible compression of the chest or direct injury to the lungs is a cause of consumption. And when we look at the position such conditions hold in civilization, at the advances that are being made by man's increasing knowledge of the operations of nature, and his application of that knowledge to his own purposes, and at the progressive increase of such tendencies, then we see that in consumption we have one of the processes by which an adjustment is being made between the body and the work it has to perform under the changing conditions of advancing civilization, by the removal of those who have a body in excess of that work, and that the survival of the so-called fittest is thereby effected.¹ G. W. HAMBLETON.

[To be continued.]

HEALTH MATTERS.

Cookery of the Poor.

A FACULTY of social science has, it is stated, been instituted at the University of Brussels; and Professor Berger, a Belgian authority in chemistry, has given a course of lectures on alimentary chemistry. In the first of them he came to the academic conclusion that it was possible to determine with precision the quantity of nutritive elements indispensable for the reparation of the power of a working-man, and consequently the amount of money necessary for purchasing this quantity, and that therefore, when the other primary wants of a working-man were determined in the same way, the minimum of salary could be fixed with scientific accuracy. Questions of taste, digestibility, and prejudice are, however, apt to be ignored in calculations of this kind; so that, although of value as a basis of information, they are far from having the practical use which their authors ascribe to them. The knowledge of the housewife and of the cook, and a familiar acquaintance with the habits and surroundings and tastes of the laboring classes, are necessary to give reality to such calculations. An excellent example of what may be done in this way is furnished in the able and interesting chapters on the subject in the popular little handbook of domestic economy issued by Messrs. Cassell & Co., and largely used in board schools, entitled "The Making of the Home," written by Mrs. Barnett, of St. Jude's, Whitechapel. The same subject is treated with great technical knowledge and power of sympathetic feeling for the poor in her chapter on "Our National Defences," in the joint essays by herself and the Rev. S. A. Barnett, in the well-known collection of essays entitled "Practicable Socialism." The subject is one in which medical men, skilled as they are in the physiology of food, and accustomed to deal with the poor both in family life and in public institutions, might give great aid. That which the working-classes greatly need is instruction in the art of braising, or slowly stewing at a low heat, combinations of meat-scrap and of vegetables. Any thing more toothsome and nutritious than the vintagers' *pot au feu*, which, says a correspondent of the *British Medical Journal*, "I lately tasted in the Medoc during the gathering of the grapes, cannot well be imagined. It was so delicious that a supply of it was ordered into the château for mid-day lunch, and it was voted by acclamation worthy of a *cordon bleu*. It was made with leg of beef, onions, carrots, cabbage, and the like, and poured smoking into bowls over slices of thin bread. What a lesson it conveyed to our managers of soup-kitchens, and what a meal for our harvesters!"

Schmerz-Freude ("Pain-Joy").

The Berlin correspondent of the *Therapeutic Gazette* states that Professor Leyden presented to his class at Charité a young lady affected with "schmerz-freude." "It is a pity I cannot translate that name for you, for 'pain-joy' would convey no meaning to you. The patient, as the professor explained, belonged to that class of hysterical women who not only experienced no pain during an operation, but, on the contrary, had a morbid desire to

¹ Pritchard, Lamarek, Darwin, Spencer.

have otherwise most painful operations performed on them without an anæsthetic. The patient in question had, during a paroxysm of hysteria, fractured her lower jaw and injured the facial artery. The injury proved a most serious one, and necessitated the ligation of the facial and carotid arteries, and finally the removal of part of the lower jaw. The patient insisted upon having all three operations performed without an anæsthetic, and told the operator that she had derived great pleasure from the operation."

Action of Caffeine.

The Paris correspondent of the *Boston Medical and Surgical Journal* reports that at the meeting of the Academy of Medicine in March, Professor Germain Sée read a paper on the researches he had undertaken in conjunction with Dr. Lapicque, his *chef de laboratoire*, on the action of caffeine on the motor and respiratory functions in a normal state and in a state of inanition, the conclusions of which may be summed up as follows: 1. Caffeine in small and repeated doses, about sixty centigrams per day, which may be prescribed with advantage to soldiers on the march, facilitates muscular work in augmenting the activity, not directly of the muscle itself, but of the motor nervous system, cerebral as well as medullary. The consequence of this double action is to diminish the sensation of effort, and to avert fatigue, which constitutes a nervous and at the same time a chemical phenomenon. 2. Caffeine prevents breathlessness and palpitations consecutive to effort, which is of great importance. 3. It thus immediately communicates to a man who gives himself up to violent and prolonged exercise the aid that he requires. 4. In producing this excitation of the cerebro-spinal motor system, on which depends the augmentation of the muscular tonicity, the caffeine augments the waste of the carbon of the organism, and particularly of the muscles, but it does not restrain the nitrogenous waste. It therefore is not, in the strict sense of the word, a means of saving (*moyen d'épargne*). 5. A saving action in general can take place in the higher animals in a complete manner to prevent the injurious effects of fasting, only in a condition impossible to realize; namely, inaction or immobility, more or less absolute where there is little expenditure without work. With caffeine, we observe just the reverse, that is to say, an intense work, which we will obtain only at the expense of the wear and tear of the organism. The animal machine can work only in consuming combustible matters, and it is precisely in promoting this combustion that caffeine permits muscular work even during fasting. 6. Caffeine has not, as is generally believed, the marvellous property of replacing food: it only replaces the general tonic excitation which the ingestion of food produces. If it be admitted that it is the direct and instantaneous action of the aliments which stimulate the stomach and the nervous system, and that their alimentary value is primarily nothing, one might substitute one stimulant for another. Caffeine, far from sparing the reserves, will place a fasting man in a position to undertake his work only by attacking these reserves, the destruction of which it hastens by the excitation of the nervous system, and, by its medium, that of the muscles. The organism will then soon use up its nutritive supply, and the caffeine will not prevent it. It is, nevertheless, of incontestable but temporary utility for the physical forces.

NOTES AND NEWS.

A NUMBER of Chicago "lady medicals" are said to have organized a committee for the purpose of securing an international congress of women physicians in 1892.

—One of the latest additions to the University of Pennsylvania is the establishment of an archaeological museum. In addition to the American specimens, the museum contains a fine collection of flints, bronze implements, and pottery from Europe, as well as objects from Asia, Africa, and the South Sea Islands.

—Dr. Rothrock, professor of botany at the University of Pennsylvania, is preparing for the establishment of a museum which promises to be of unusual industrial importance. The new collection, to be called the "Museum of Economic Botany," will consist of specimens of all kinds of woods, vegetable fibres, grains and drugs, arranged so as to illustrate the processes of manufac-

ture from the raw product, and the various uses to which each material may be put.

—A study of the figures presented in the 1890 edition of George P. Rowell & Co.'s "American Newspaper Directory" reveals some interesting facts pertaining to the business of newspaper publishing. This volume, which was issued April 1, and is the acknowledged authority on newspaper statistics, estimates the total number of papers now published in the United States and Canada at 17,760. Of these, 812 are Canadian publications. This is a net increase, since last year, of 629 in the United States and 24 in the Dominion of Canada.

—In the course of some excavations lately made at Ludwigshafen, on the Rhine, the tibia and two teeth of a mammoth, and the jaw of a stag, were found. The skeleton of another "antediluvian" animal, *Nature* states, was discovered in the limestone near Oberhildesheim. The researches are being continued.

—According to a French journal, the number of foreign students now studying in Paris is about 1,000, of whom 729 (107 of them women) are studying medicine, and 182 law. Literature has 66 (including 9 women), science 60, and pharmacy 23. It is remarkable, says *Nature*, that Russia furnishes the largest contingent of the foreign medical students, viz., 150; America coming next with 139. We find no mention of England. The foreign element is, on the above estimate, about one-tenth of the whole.

—At a meeting of the Société Chimique de Paris in March a paper by M. Meslans was presented by M. Moissan, announcing the isolation of fluoroform (CHF_3), the fluorine analogue of chloroform (CHCl_3). A brief abstract of this preliminary communication will be found in the *Chemiker Zeitung* for March 26. During the course of the work recently published concerning propyl and isopropyl fluorides, we learn from *Nature*, M. Meslans had occasion to study the action of silver fluoride upon iodoform. The result of this action was found to vary according to the conditions of experiment, liquid products being obtained under certain conditions, and gaseous products under others. The end result, however, was always the production of a gas, which turns out to be fluoroform. Chloroform, as is well known, is readily attacked by a warm alcoholic solution of potash, potassium chloride and potassium formate being produced: $\text{CHCl}_3 + 4\text{KOH} = \text{H} \cdot \text{COOK} + 3\text{KCl} + 2\text{H}_2\text{O}$. It is interesting to learn that fluoroform behaves in precisely the same manner, for the gas is decomposed by either aqueous or alcoholic potash with formation of fluoride and formate of potassium. On being heated to redness in a glass tube, fluoroform is also decomposed, with production of gaseous silicon tetrafluoride and a deposit of carbon. The gas is only very slightly absorbed by water, but it dissolves readily in chloroform or alcohol. Fluoroform has also been prepared by substituting chloroform or bromoform for the iodoform used in the first experiments.

—The superiority of the highways of Europe over those of the United States is one of the first things which attracts the attention of the traveller from this country. In Europe the roads are under the supervision of officials who are thoroughly trained for their work. In the United States road-engineering is committed to the control of citizens not particularly interested in this imposed task, and with no special training for their duties. The results are evident. Our public roads are a disgrace to the people. To assist in remedying this condition of affairs in Ohio, by disseminating information on the subject of roads, and proper ideas with regard to their construction and management, Case School of Applied Science, Cleveland, will give, free of charge, instruction in road-engineering sufficient to qualify a man of ordinary intelligence to properly locate and manage a highway. The instruction will consist of lectures on the following topics: location and construction of roads; keeping up and repairing roads; ditching and drainage; road-making machinery; improvement of the surface of roads, including the use of gravel, broken stone, plank, paving, etc.; highway structures, including retaining walls, culverts, bridges, etc.; cost of earthwork and mechanical structures; highway administration; and laws relating to highways. For those who desire it, instruction will be given in the use of instruments employed in road-engineering,—the compass, transit, and